

REMARKS

This Amendment is submitted in reply to the Office Action dated April 9, 2010. Applicant respectfully requests reconsideration and further examination of the patent application pursuant to 37 C.F.R. § 1.111.

Summary of the Examiner's rejections

Claims 1-3, 11, 22-23, and 28-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631).

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Bovo et. al. (US 2003/0148755).

Claim 6-8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Satt et. al. (US 2004/0248583).

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Komandur et. al. (US 7327708).

Claims 12 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Jiang et. al. (US 2002/0044527).

Claims 13, 14, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Chamaytelli et. al. (US 2002/0194325).

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Sen et. al. (US 6208620).

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Johnson et. al. (US 2003/0237016).

Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Yokoyama et. al. (US 2004/0243715).

Claims 24-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Lau et. al. (US 7466652).

Claim 31 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Daniel (US 2004/0033806) in view of Snyder et. al. (US 2003/0134631) and Nelson et. al. (US 7280803).

Summary of claim amendments

Applicant has amended the independent claim 31 where the support for the amendments can be found on page 9, line 27 through page 11, line 22 and FIG. 1 in the originally filed PCT patent application. No new subject matter has been added.

Remarks regarding the §103(a) rejections

Applicant respectfully traverses the obviousness rejection of the pending independent claim 1 in view of Daniel, Snyder or any combination thereof. The pending independent claim 1 recites the following:

1. A method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of

capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network;

building a traffic and session database by parsing through the traces in order to extract and correlate information about each and every user session and user transaction which happened during the measurement period;

defining a set of key performance indicators, KPI, to be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters; and

calculating the defined key performance indicators, wherein the step of calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database and obtaining a quality of service measure of the selected individual transactions (emphasis added).

In the Office Action, the Examiner stated that "Daniel did not teach specifically the method of calculating the performance indicators is carried out by selecting an appropriate subset of the transactions in the traffic database" (see page 3 of the Office Action). In an attempt to correct Daniels's deficiency the Examiner stated "Snyder teaches in an analogous art a method of calculating the performance indicators is carried out by selecting an appropriate subset of the transactions in the traffic database (abstract; "monitoring transactions", Paragraph [0039-0041]))" (see page 3 of the Office Action. The Examiner cited Snyder as follows:

In a method and system, one or more communication devices within a communication network are provided with a dynamically and remotely configurable probe element, implemented at least partially in software and controllable by the network operator via one or more communication links, capable of monitoring, measuring and capturing user interaction data flowing from voice and/or data transactions occurring in the network. User interaction data reflects a user's experience on the network and thus provides valuable raw data usable by the network operator for improving network quality from the user's perspective, especially when received from a statistically significant number of network user devices. Collected user interaction data can include network engineering metric data and/or user profile data.

[0039] In FIG. 4, the interaction between a communication device and the rest of the network is described. As in FIG. 3, Blocks 410-430 describe monitoring of transactions to generate the user interaction data. At Block 440, this data is transmitted to the network. As previously described, this transmission may occur directly from the communication device to the network or it may occur via a collection communication device. The user interaction data will be transmitted to a server element of the network where it may be analyzed by a network operator, meaning someone interested in the network engineering metrics and/or user profile information contained within the user interaction data, to identify one or more network engineering problems at Block 450. These problems, once identified, may then be countered, as in Block 460. Reports based upon the identified network problems and/or steps taken to counter them may be generated at Block 470; it is understood that report generation may occur before or after Block 460. Such reports will have value to various functionalities of the network operator, such as engineering, customer service, operations, maintenance, etc.

[0040] As discussed, the more data that is collected from communication devices throughout the network the better the statistical basis for identifying and improving network quality from the perspective of the network user. To this end, it is understood that Blocks 410-440 will likely be performed for multiple communication devices of the network. The user interaction data from multiple communication devices can then be aggregated in order that statistically significant information about the network is collected. The identification of

network problems and any subsequent counter-measures enacted in response to them can thus be expected to be more efficient and efficacious.

[0041] Those of ordinary skill in the art will recognize that the present invention has been described in terms of exemplary embodiments. In particular, it should be noted that a number of spring plungers different from two may be used without departing from the spirit and scope of the present invention. It should also be noted that the gimbal system could employ one or three axes as well.

Applicant submits that Snyder does not correct Daniel's deficiency nor does Snyder teach or suggest the claimed step of "calculating the defined key performance indicators, wherein the step of calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database and obtaining a quality of service measure of the selected individual transactions." In particular, Snyder's cited sections simply do not teach or suggest "calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database". In fact, Snyder specifically teaches just the opposite where "the more data that is collected from communication devices throughout the network the better the statistical basis for identifying and improving network quality from the perspective of the network user (see paragraph [0040])". Plus, the secondary references namely Bovo, Satt, Komandur, Jiang, Chamaytelli, Sen, Johnson, Yokoyma, Lau and Nelson fail to correct the deficiencies of Daniel and Snyder. In view of at least the foregoing, the Applicant respectfully submits that the pending independent claim 1 is patentable over the cited references and respectfully requests the allowance of the pending independent claim 1 and the corresponding dependent claims 2-8, 10-20, and 22-27.

Applicant respectfully submits that the pending independent claims 28 and 30 are patentable in view of the cited references. The pending independent claims 28 and 30 recite the same or similar distinguishing limitations that have been discussed above with respect to the pending independent claim 1. As such, the aforementioned remarks regarding the patentability of the pending independent claim 1 apply as well to the pending independent claims 28 and 30. Accordingly, the Applicant respectfully

requests the allowance of the pending independent claims 28 and 30 and the corresponding dependent claim 29.

Applicant respectfully submits that the amended independent claim 31 is patentable in view of Daniel, Snyder, Nelson or any combination thereof. The amended independent claim 31 recites the following:

31. A method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of:

capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network;

building a traffic and session database by parsing through the traces in order to extract and correlate all the information which is needed to the database, wherein the traffic and session database contains information about a plurality of user transactions which happened during a measurement period, wherein each user transaction is associated with a specific subscriber using captured session management signaling, and each user transaction is associated with a cell location using captured mobility management signaling, said building the traffic and session database comprises the steps of:

parsing through the raw traffic traces for internet protocol (IP) packets;

processing the IP packets one by one to group together the IP packets belonging to a same user transaction of a same user;

storing condensed application transactions information associated with the IP packet groups;

associating subscribers with the stored condensed application transactions information by:

parsing through signaling message used to initiate subscriber data sessions where the subscribers identify themselves by using unique identifiers and the cellular mobile data network answers with IP addresses which the mobile stations use for the user transactions;

associating the user transactions with cell level locations by:

monitoring mobility management signaling when the mobile stations change cells to obtain identifiers of the subscribers and the cell level locations;

storing the identifiers of the subscribers together with the cell level locations and timestamps when the subscribers visited the cells;

extending the stored condensed application transactions information to include the cell level locations of the user transactions and indicators of cell changes during a course of the user transactions; and

storing summary data about the users transactions belonging to same user sessions together with a list of cells visited during the user sessions and the timestamps when the subscribers visited the cells;
defining a set of key performance indicators; and
calculating the set of key performance indicators using a subset of the information in the traffic and session database to monitor user perceived end-to-end performance on a cell level (emphasis added).

The above remarks regarding Daniel's deficiency and Snyder's deficiency associated with the claimed calculating step in claim 1 are relevant and apply as well with respect to the amended independent claim 31. In addition, Applicant respectfully submits that Nelson does not teach the highlighted steps associated with the step of building the traffic and session database. In this regard, Nelson discloses the following:

A system and method of collecting call data from a Mobile Telephone Switching Office and combining this data with location information of a wireless device (or devices) to generate information reports concerning the electromagnetic coverage of a cell site. The collection of call data from a switch permits consideration of uplink information in the analysis of system performance. This information combined with location information obtained using a time difference of arrival (TDOA) technique allows the cell site to be evaluated and to remove transient effects associated with, for example, local terrain and other physical impairments.

(see abstract)

The teaching of Nelson differs in many respects to the highlighted steps associated with the step of building the traffic and session database. For instance, Nelson obtains the wireless device's location information by using a time different of arrival (TDOA) technique. In contrast, the present invention includes the step of monitoring mobility management signaling when the mobile stations change cells to obtain identifiers of the subscribers and the cell level locations. In addition, Nelson fails to disclose or suggest the parsing step, the processing step, the storing step, the associating step, the second parsing step, the monitoring step, the second storing step, the extending step, and the third storing step. The secondary references namely Bovo, Satt, Komandur, Jiang, Chamaytelli, Sen, Johnson, Yokoyma, Lau and Nelson fail to correct the deficiencies of Daniel, Snyder and Nelson. In view of at least the foregoing,

the Applicant respectfully submits that the pending independent claim 31 is patentable over the cited references and respectfully requests the allowance of the pending independent claim 31.

CONCLUSION

In view of the foregoing remarks, Applicant believes all of the claims currently pending in the application to be in a condition for allowance. Therefore, Applicant respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for pending claims 1-8, 10-20, and 22-31.

The Commissioner is hereby authorized to charge any fees for this paper to Deposit Account No. 50-1379.

Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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